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**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
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Refer to:

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Re: ESA Section 7 Consultation for Programmatic Actions in the Willamette, Siuslaw, and Mt. Hood National Forests, and Salem and Eugene Districts Bureau of Land Management that are Likely to Adversely Affect Upper Willamette River Steelhead and Upper Willamette River Chinook Salmon within the Willamette Province, Oregon

Dear Messrs. Kenops, Linares, Larsen, Manning, and Williamson:

This letter represents the National Marine Fisheries Service's (NMFS) biological opinion (Opinion), pursuant to Section 7(a)(2) of the Endangered Species Act (ESA), that the effects of the programmatic actions in the Willamette, Siuslaw, and Mt. Hood National Forests (NF), and Salem and Eugene Districts Bureau of Land Management (BLM), together with cumulative effects and the status of the environmental baseline, are not likely to jeopardize the continued existence of Upper Willamette River (UWR) steelhead (*Oncorhynchus mykiss*) and UWR chinook salmon (*O. tshawytscha*), or result in destruction or adverse modification of their proposed critical habitat. This letter also authorizes incidental take associated with the programmatic actions.



## **Background**

On May 25, 1999, the NMFS received from the Forest Supervisors of the Willamette, Siuslaw, and Mt. Hood NFs, and the District Managers of the Salem and Eugene BLM Districts a letter and biological assessment (BA) requesting formal and informal consultation regarding the potential effects of their programmatic activities on UWR steelhead and UWR chinook salmon. On July 19, 1999, Van Manning, Salem District BLM Manager, submitted to Rick Applegate, NMFS, additional information describing in greater detail the relevant management direction for Upper Willamette programmatic actions; i.e., the appropriate Northwest Forest Plan (NFP) Standards and Guidelines (S&Gs) and Best Management Practices (BMPs) from Salem and Eugene BLM District Resource Management Plans (RMP). On July 20, 1999, the Willamette NF submitted electronically to the NMFS similar additional information which describes in greater detail, the relevant management direction from Willamette NF S&Gs and BMPs for the programmatic actions.

The UWR steelhead Evolutionarily Significant Unit<sup>1</sup> (ESU) was listed as threatened under the ESA on March 25, 1999 (64 FR 14517). Critical habitat was proposed for all listed and proposed steelhead ESUs on February 5, 1999 (64 FR 5740). The UWR chinook salmon ESU was listed as threatened under the ESA on March 24, 1999 (64 FR 14308). Critical habitat was proposed for UWR chinook salmon when they were proposed for listing (March 9, 1998, 63 FR 11482).

This Opinion has been completed pursuant to the ESA and its implementing regulations (50 CFR § 402) and constitutes formal consultation for listed UWR steelhead and UWR chinook salmon. The objective of this Opinion is to determine whether the subject programmatic activities are likely to jeopardize the continued existence of UWR steelhead and UWR chinook salmon. In addition, this Opinion will assess whether the proposed actions will result in the destruction or adverse modification of their proposed critical habitat.

The proposed actions comply with the Record of Decision S&Gs of the NFP (USDA-FS & USDI-BLM 1994), the Willamette NF, Siuslaw NF, and Mt. Hood NF Land and Resource Management Plans (LRMPs), and Salem and Eugene BLM Districts RMPs.

In addition to compliance with ESA regulations, this Opinion has been prepared in accordance with direction established in the May 31, 1995, interagency agreement for Streamlining Consultation Procedures Under Section 7 of the ESA. An interagency consultation process for implementing the

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<sup>1</sup> For the purposes of conservation under the Endangered Species Act, an Evolutionarily Significant Unit (ESU) is a distinct population segment that is substantially reproductively isolated from other conspecific population units and represents an important component in the evolutionary legacy of the species (Waples 1991).

streamlining agreement was jointly adopted by the U.S. Forest Service (USFS), BLM, U.S. Fish and Wildlife Service, and the NMFS on August 29, 1995, and revised and updated on February 26, 1997. In response to the direction to ensure early and frequent interagency coordination throughout the consultation process, an interagency team (referred to as “Level-1 team”) with NMFS, USFS, and BLM was formed within the area of the Willamette Province. Each programmatic category was reviewed by the Level-1 team. The Level-1 team utilizes the procedures established by NMFS (1996b) to determine the effects of proposed actions relative to the environmental baseline at project and watershed scales, using criteria based on the species’ biological requirements. Protective measures in addition to those initially included in the proposed action may be developed during the Level-1 team review. If there is a disagreement between the members that can not be resolved, the issue is then elevated to other hierarchical interagency teams for resolution.

In late 1998 and early 1999, the Willamette Province Level-1 team members Michelle Day (NMFS), Amy Unthank (Willamette NF), Mike Clady (Siuslaw NF), Joe Moreau (Mt. Hood NF), Bob Ruediger (Salem District BLM), and Neil Armantrout (Eugene District BLM) met to review the programmatic actions on the action agencies’ land within the range of UWR steelhead and UWR chinook salmon. The subject BA and supporting information resulted from these meetings.

The BA documents the environmental baseline at the 5<sup>th</sup> field hydrologic unit code<sup>2</sup> watershed (hereafter referred to as 5<sup>th</sup> field watershed) scale and effects determinations at the project scale. In addition, the BA provides documentation demonstrating that the projects are consistent with the NFP’s Aquatic Conservation Strategy (ACS). Because consistency with the ACS is typically analyzed at the 5<sup>th</sup> field watershed scale, the effects determinations were also analyzed at that scale. Baseline descriptions and effects determinations for each programmatic action proposed in the BA were completed by the USFS and BLM. The Level-1 team collaborated on the project scale and 5<sup>th</sup> field watershed scale determinations.

### **Proposed Actions**

The USFS and BLM requested formal consultation on the following 17 categories of programmatic actions: road maintenance, aquatic habitat projects, trail maintenance and construction, road decommissioning and obliteration, repair of storm damaged roads, discretionary road use permits, discretionary rights of way, nearstream and instream surveys, environmental education with instream

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<sup>2</sup> Stream drainages can be arranged in nested hierarchies, in which a large drainage is composed of smaller drainages. The USFS and BLM use a system in which these drainages are numbered in a computer database for analytical purposes. The number identifier of a particular drainage in this database is called its hydrologic unit code, or HUC. This HUC increases with decreasing drainage area, thus a 4<sup>th</sup> field HUC (such as the Clackamas River subbasin) is composed of several 5<sup>th</sup> field HUCs (such as Eagle Creek, Fish Creek, etc., hereafter referred to as a watershed), and so on. The Northwest Forest Plan determined that the scale of watershed analyses should be 20 to 200 square miles, which often corresponds to a 5<sup>th</sup> field watershed. Fifth-field watersheds are hierarchal subdivisions of western Oregon river subbasins that were cooperatively delineated by the USFS and BLM to facilitate watershed analysis. Fifth-field watersheds (approximately 20-200 square miles in size) provide a proper context for assessing many processes and features affecting ecosystem function.

activities (Salmon Watch), pump chances, water withdrawal permits, firewood collection, public use of developed sites and dispersed public use, developed boat ramps, non-riparian rock quarries, infrastructure maintenance, and recreating on surface waters.

The ESA implementing regulations define “effects of the action” as “...the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline.... Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration” (50 CFR § 402.02). The programmatic categories of discretionary road use permits, discretionary rights of way, and water withdrawal permits often include interrelated or interdependent actions such as non-Federal timber harvest or surface water withdrawal that would not occur but for issuance of the Federal permit. Without knowing the details of such interrelated and interdependent actions, the NMFS cannot effectively analyze the effects of those programmatic categories. Therefore, the NMFS is unable to conclude consultation on the programmatic categories of discretionary road use permits, discretionary rights of way, and water withdrawal permits in this Opinion. This Opinion will conclude formal consultation on the remaining 14 programmatic categories. Hereafter, all reference to programmatic actions in this Opinion excludes the categories of discretionary road use permits, discretionary rights of way, and water withdrawal permits.

The BA submitted to the NMFS for the categories addressed in this Opinion describes the programmatic categories and their effects on UWR steelhead and UWR chinook salmon. Some of the categories in the BA were determined “may affect, but not likely to adversely affect” (NLAA) UWR steelhead and UWR chinook salmon, and others were determined “may affect, and likely to adversely affect” (LAA) these species. The programmatic categories of actions that were determined to be LAA are the subject of this Opinion. The NLAA actions were covered in a June 29, 1999, concurrence letter, from William Stelle, Jr. (NMFS), to Darrel Kenops (Willamette NF), James Furnish (Siuslaw NF), Gary Larsen (Mt. Hood NF), Van Manning (Salem District BLM), and Denis Williamson (Eugene District BLM).

The proposed actions are programmatic, meaning that each category of actions may include a number of individual actions, which, when grouped together, represent a program. Since the individual actions may occur at many individual sites across the landscape (e.g., dispersed public use), on a routine basis (e.g., road maintenance), or sporadically (e.g., requests for road use permits), the Level-1 team concurred that these kinds of actions should be assessed programmatically.

The following are descriptions of each programmatic action.

#### Road Maintenance

These activities are designed to maintain safety and control, and prevent road erosion and sedimentation. This category includes any road maintenance activities using heavy equipment, including:

surface maintenance (grading, leveling); drainage maintenance and repair; vegetation management (brushing, limbing, seeding, and mulching); hauling waste or fill for road surfaces or ditches; surface replacement (paving, repaving, chip-sealing, and rocking); small tree or slide removal; snowplowing; dust abatement; and maintenance and repair of structures (relief or channel culverts, bridges). Road maintenance due to storm events such as small slide removal and stabilization or culvert and drainage repair is performed as exigencies arise.

#### Aquatic Habitat Projects

Aquatic habitat projects are completed to restore spawning, rearing, and migratory conditions in streams and lakes. They are constructed or created within the stream channel or the immediate floodplain to improve aquatic habitat, channel stability, or fish passage, and the maintenance thereof. Projects include the placement of large woody debris (LWD; whole trees or portions of trees), boulders and gravel into the channel, excavation of side channels and alcoves, and stream bank and channel stabilization (does not include riprap). Project access roads are rehabilitated with techniques which include seeding, waterbars, ripping and blocking. Passage improvements include the replacement of barrier culverts with passable culverts, pipe-arches or bridges; construction of fish ladders and placement/construction of sills (boulder, wood, concrete) to improve access to culverts. Work may be accomplished using manual labor, heavy equipment, or helicopters and may involve the use of this equipment in the stream channel.

#### Trail Maintenance and Construction

Trail maintenance is implemented to improve safety, prevent erosion, and prevent damage to resources. Trails are constructed in response to recreational use. This category covers trails which are primarily for hiking or equestrian use. Trail maintenance and reconstruction of existing trails involves actions such as removing leaning and down trees from the trail, diverting erosive water off trails (e.g. waterbars, drain dips, culverts), repair of erosion sites (addition of gravel or logs in wet sites), construction/improvements to stream crossings, brushing, improving the tread, and constructing and maintaining rock crib walls to support unstable trail sections. Trail construction includes new trails outside the stream influence zone and the relocation or extension of existing trails. This category does not include actions which are not directly related to the repair or construction of trails or trail stream crossings. It does not include maintenance or construction of trails for motorcycle/OHV use, nor the use of riprap.

#### Road Decommissioning and Obliteration

This category includes the removal of those elements of a road that reroute hillslope drainage and present slope stability hazards from unnecessary, unstable, or poorly located roads. It also includes dispersed recreation campsite removal. This category includes actions such as bridge and culvert removal, removal of asphalt and gravel, subsoiling of road surfaces, outsloping, waterbarring, fill removal, sidecast pullback, revegetating with native or non-evasive, non-native species, and roadway barricading to exclude vehicular traffic.

### Repair of Storm Damaged Roads

These projects are implemented to maintain safety, open access, and prevent further damage to resources resulting from storm related damage to roads. Projects involve actions such as the removal of large slides; reconstruction, repair or relocation of roads damaged by surface erosion, high streamflows, fill failure, culvert failure and landslides; stabilization of slopes; and the repair or replacement of bridges and culverts. Work is accomplished using heavy equipment and may occur in the wet season and may involve work in stream channels.

### Nearstream and Instream Surveys

Surveys are conducted to assess stream condition, fish, aquatic invertebrate populations, and plant, wildlife, and other resources in adjacent riparian areas. It does not include direct capture (traps, seines, gill nets, etc.) or electrofishing. The action consists of walking surveys conducted in and near streams, and includes aquatic habitat inventory, and fish, botany, mollusk, amphibian, cultural resource (including test pits approximately 1 square meter in size), and riparian vegetation surveys and monitoring. A near stream survey refers to surveys done on stream banks or within 25 feet of stream reaches with listed fish species. This category includes snorkeling and spawning surveys.

### Environmental Education with Instream Activities

This category entails programs to teach people about the life histories and importance of salmon and other aquatic organisms. It includes programs such as Salmon Watch, which takes classes of school children to look at spawning salmon and to participate in other activities like collecting macroinvertebrates and measuring water quality in and along the stream.

### Pump Chances

This category entails maintenance and use of sites for water withdrawal during prescription burns, emergency fire conditions, or road maintenance. Access to pump chances is maintained by removing brush from trails to access points, trees from helicopter loading sites and the installation of boulders (or similar) to increase pool depth. Most pump chances are located on fish bearing streams, although typically water for fire is not withdrawn in a given year because of little fire activity. Withdrawals are for fire control, dust abatement, and compacting gravel roads.

### Firewood Collection

Firewood collection allows members of the public to cut and haul away waste wood from landings, blown down conifers, and live or down alder along roads. Permits are issued for both commercial and noncommercial purposes, and are often issued to allow legal removal of logs lying close to roads before they are stolen.

### Public Use of Developed Sites and Dispersed Public Use

This allows access to and use of public lands for recreation. Developed recreation sites include campgrounds, day use areas, and interpretive sites. Dispersed public use includes the use of Federal lands for short term camping, fishing, hunting, hiking, boating, wildlife watching, and similar activities other than in developed facilities. This category does not include the development of new sites.

### Developed Boat Ramps

This allows lake or river access for purpose of recreating on surface waters. This category includes maintenance and use of developed boat ramps for loading and unloading boats by hand or from trailers, and associated staging and parking areas, docking facilities, and other developments such as picnic or sanitation facilities. This programmatic category does not include the role of developed boat ramps in harvesting of listed species nor the development of new sites.

### Non-Riparian Rock Quarries

Activities in this category provide a source of rock and gravel for use in road construction and maintenance, and for other activities such as restoration projects. Activities include drilling, blasting, crushing, hauling of materials on new or existing roads, and storing of waste material from landslides or decommissioned roads. It does not include the development of new sites.

### Infrastructure Maintenance

This is the maintenance of infrastructure improvements in Riparian Reserves for use by the public and for administrative purposes. This includes the routine maintenance of developments such as campgrounds, interpretive sites, education sites, storage areas, administrative sites, and similar improvements. Maintenance may include activities such as pruning of brush and trees, operation of sewage facilities, maintaining roads and other surfaces, maintaining buildings, streambank stabilization (does not include additional areas of riprap) and operation of sanitary facilities using hand tools and power equipment. It does not include the development of new sites.

### Recreating on Surface Waters

This category includes the issuance of Special Use Permits allows for white water rafting, kayaking, and canoeing, and to allow access to USFS/BLM lands for this purpose. Outfitters conduct tours on streams during high flows. These activities typically occur during May.

## **Biological Information and Critical Habitat**

### UWR steelhead

Available historical and recent UWR steelhead abundance information is summarized in Busby *et al.* (1996). No estimates of historical (pre-1960s) abundance specific to this ESU are available. Willamette Falls Dam counts for the years 1989-1993 indicate that the late-run (native) winter steelhead averaged 4,200, while early-run winter and summer steelhead averaged 1,900 and 9,700,

respectively. Adequate angler catch data were available to derive approximate average winter steelhead escapement for three tributaries: Mollala River, 2,300 (predominantly non-native); North Fork Santiam River, 2,000; and South Fork Santiam River, 550.

Biological, life history, and population trends information for UWR steelhead can be found in Busby *et al.* (1995) and Busby *et al.* (1996). The following is a very general life history of UWR steelhead. Only the late-run winter steelhead are included in the UWR steelhead ESU. The native steelhead of this basin are late-migrating winter steelhead, entering fresh water primarily in March and April. They typically spawn in late winter or spring (Barnhart 1986; Nickelson *et al.* 1992). Some adults, however, do not enter coastal streams until spring, just before spawning (Meehan and Bjornn 1991). Steelhead eggs generally incubate for 1.5 to 4 months between February and June (Bell 1991), and typically emerge from the gravel two to three weeks after hatching (Barnhart 1986). Juveniles generally spend 2 years in freshwater before migrating to the ocean. They typically reside in marine waters for two or three years prior to returning to their natal stream to spawn as four- or five-year olds (August 9, 1996, 61 FR 41542).

Critical habitat was proposed for the UWR steelhead on February 5, 1999 (64 FR 5740). UWR steelhead proposed critical habitat includes all river reaches accessible to listed steelhead in the Willamette River and its tributaries above Willamette Falls. Also included are river reaches and estuarine areas in the Columbia River from a straight line connecting the west end of the Clatsop jetty (south jetty, Oregon side) and the west end of the Peacock jetty (north jetty, Washington side), upstream to, and including, the Willamette River in Oregon. With regard to adjacent riparian zones, the NMFS defines steelhead critical habitat based on key riparian functions. Specifically, the adjacent riparian area is defined as the area adjacent to a stream that provides the following functions: shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter. The physical and biological features that create properly functioning salmonid habitat vary throughout the range of steelhead and the extent of the adjacent riparian zone may change accordingly, depending on the landscape under consideration.

#### UWR chinook

Chinook populations in the UWR chinook salmon ESU have a life history pattern that includes traits from both ocean- and stream-type life histories. Ocean distribution of chinook in this ESU is consistent with an ocean-type life history, with the majority of chinook being caught off the coasts of British Columbia and Alaska. However, smolt emigrations occur as young of the year and as age-1 fish. Adults return to the Willamette River primarily March through May at ages 3-5. Historically, spawning occurred between mid-July and late October. However, the current spawn timing of hatchery and wild chinook is September and early October due to hatchery fish introgression.



The abundance of naturally-produced spring chinook in the ESU has declined substantially. Historically, the predominant areas producing spring chinook were the Molalla, Santiam, McKenzie, and Middle Fork Willamette river subbasins, which were thought to produce several hundreds of thousands of spring chinook (Nicholas 1995). Currently, the McKenzie River is the primary natural production area within the ESU. From 1946-50, the geometric mean of Willamette Falls counts for spring chinook was 31,000 fish (Myers *et al.* 1998), which represented primarily naturally-produced fish. The most recent 5 year (1992-96) geometric mean escapement above the falls was 26,000 fish, comprised predominantly of hatchery-produced fish. Nicholas (1995) estimated 3,900 natural spawners in 1994 for the ESU, with approximately 1,300 of these spawners being naturally produced. Myers *et al.* (1998) showed strong short-term negative trends (-7% or more) in spring chinook abundance for all natural populations in the ESU where data existed. The long-term trend for total spring chinook abundance within the ESU has been approximately stable. However, the great majority of returning fish to the Willamette River in recent years have been of hatchery origin. It is questionable whether natural production within the Willamette Basin is self-sustaining, even in the absence of fisheries (Myers *et al.* 1998).

Habitat loss and degradation has contributed to the decline of spring chinook in the Willamette Basin. Many of the key production areas in the basin have been blocked by the construction of dams. Channelization and the loss of complex side channel and wetland habitat has reduced the amount of rearing habitat in the mainstem Willamette River. Alterations to temperature and flow regimes have resulted in premature emergence of juveniles and lower flows during spring smolt emigrations which results in lower juvenile survival. Large artificial production programs within the basin have likely contributed to the loss of genetic diversity among natural populations from hatchery fish straying into natural production areas. Harvest rates in the past have been 50-70%, which were too high for wild stocks to sustain.

Proposed critical habitat is designated to include all river reaches accessible to chinook salmon in the Willamette River and its tributaries above the Willamette Falls and the adjacent riparian zone as described above. Also included are river reaches and estuarine areas in the Columbia River from its mouth upstream to and including the Willamette River in Oregon.

### **Evaluating Proposed Actions**

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by its implementing regulations (50 CFR § 402). When the NMFS issues a conference or biological opinion, it uses the best scientific and commercial data available to separately determine whether a proposed Federal action is likely to: (1) jeopardize the continued existence of a proposed, listed, or candidate species, and/or (2) destroy or adversely modify a proposed or listed species' critical habitat. This analysis involves the following steps: (A) define the biological requirements of the species; (B) evaluate the environmental baseline relative to the species' current status; (C) determine the effects of the proposed or continuing action on the species; (D) determine whether the species can be expected to

survive with an adequate potential for recovery under the effects of the proposed or continuing action, the environmental baseline and any cumulative effects, and considering measures for survival and recovery specific to other life stages; and (E) identify reasonable and prudent alternatives to a proposed or continuing action that is likely to jeopardize the continued existence of the species.

## **A. Biological Requirements**

The first step in the method the NMFS uses in applying the ESA standards of Section 7(a)(2) to Pacific salmonids is to define the species' biological requirements that are most relevant to each consultation. The NMFS finds that these biological requirements are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for the survival and recovery of the listed species. Individual environmental factors include water quality, habitat access, physical habitat elements, river channel condition, and hydrology. These are measurable variables, with properly functioning values determined by the best available information as those necessary for sufficient prespawning survival and distribution, spawning success, egg-to-smolt survival, smolt emigration survival and timing, and smolt condition to allow the long-term survival of the species. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are necessary for the survival and recovery of these species.

The programmatic categories addressed in this Opinion cover ten 4<sup>th</sup> field subbasins with multiple 5<sup>th</sup> field watersheds within the range of UWR steelhead and UWR chinook salmon. Due to the large scale of the action area for these programmatic actions, individual 4<sup>th</sup> field subbasins and 5<sup>th</sup> field watersheds will have varying levels of importance towards meeting the biological requirements of the ESUs in terms of properly functioning freshwater habitat parameters. Overall, the actions addressed in this Opinion are considered to have only minor effects, if any, on habitat parameters. It has been determined that when effects occur, they will only be short-term and will not degrade the baseline conditions. The Level-1 team's annual review and tracking of the projects implemented under this Opinion will assure that this assumption is regularly reconfirmed.

## **B. Environmental Baseline**

The environmental baseline is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area (USFWS and NMFS 1998). The action area covered by this Opinion includes the Willamette, Siuslaw, and Mt Hood NFs, and Salem and Eugene Districts BLM within UWR steelhead and UWR chinook salmon. There are ten 4<sup>th</sup> field subbasins within the range of UWR steelhead and UWR chinook salmon (Tualatin, Yamhill, Middle Willamette, Mollala, North Santiam, South Santiam, Upper Willamette, McKenzie, Middle Fork Willamette, and Coast Fork Willamette). Each 4<sup>th</sup> field subbasin contains

multiple 5<sup>th</sup> field watersheds. Due to the programmatic nature of this consultation, the Level-1 team assessed the environmental baseline for the proposed projects at the 5<sup>th</sup> field watershed scale using the methodology described by NMFS (1996b). Refer to the summary tables in the BA for a more accurate depiction.

The general environmental baseline affecting Pacific salmonids has been described in various documents. FEMAT (1993) provides a regional assessment of aquatic ecosystems within the range of the northern spotted owl (including the range of UWR steelhead and UWR chinook salmon), particularly with regard to land management actions. Chapter V of FEMAT (1993) focuses on current aquatic habitat conditions and the effects of degraded habitat on fish populations. Page V-2 notes that "[a]quatic ecosystems in the range of the northern spotted owl exhibit signs of degradation and ecological stress." Many factors such as dams, overharvest, excessive predation, disease, artificial propagation, poor ocean conditions, and the destruction and alteration of habitat have been implicated in the decline of Pacific salmonids. Aquatic habitat degradation has resulted from a wide range of past land- and water-use practices, including timber harvest, road construction, mining, grazing, agriculture, construction and operation of dams, irrigation, and flood control (Busby *et al.* 1996; Spence *et al.* 1996). These activities occurred on USFS and BLM lands within the UWR steelhead and UWR chinook salmon ESUs prior to development of the NFP and its ACS.

In general, these activities have: (1) reduced connectivity between streams, riparian areas, floodplains, and uplands; (2) significantly increased sediment yields, leading to pool filling and reduction in spawning and rearing habitat; (3) reduced or eliminated instream replenishment of LWD which serves to trap sediment, stabilize stream banks, form pools, and provide cover; (4) reduced or eliminated vegetative canopy that minimizes stream temperature fluctuations; (5) reduced stream complexity by causing streams to become straighter, wider, and shallower which reduces spawning and rearing habitat and increases temperature fluctuations; (6) altered peak flow volume and timing; (7) altered water tables and base flow; and (8) contributed to degraded water quality by adding toxicants through mining and pest control (FEMAT 1993; Rhodes *et al.* 1994; Spence *et al.* 1996).

In addition to the 5<sup>th</sup> field watershed scale environmental baseline, the Level-1 team combined the available assessments of the baseline conditions of the associated 5<sup>th</sup> or 6<sup>th</sup> field sub-watersheds to arrive at the baseline condition of each 4<sup>th</sup> field subbasin. In general, the environmental baseline of nine of the ten 4<sup>th</sup> field subbasins is characterized as "at risk" or "not properly functioning" for a majority of the habitat indicators (Table 1). The McKenzie River subbasin was characterized as "properly functioning" or "at risk" for most of the habitat indicators.

In summary, the principle ways in which land management practices prior to the NFP have contributed to the decline of salmon habitat include: (1) overemphasis on production of non-fishery commodities resulting in losses of riparian and fish habitat; (2) failure to take a biologically conservative or risk-averse approach to planning land management actions when inadequate information exists about the relationship between land management actions and fish habitat; (3) planning

land management activities on a site-specific basis rather than on a broader, watershed scale; and (4) reductions in the number, size, and distribution of remaining high-quality habitat areas (such as roadless and minimally developed areas) that serve as biological refugia for anadromous fish subpopulations (FEMAT 1993; Rhodes *et al.* 1994).

### **Analysis of Effects**

The BA and supporting information document compliance for each of the programmatic action categories with the following critical components of the NFP: S&Gs, watershed analysis, watershed restoration, land allocations, and the ACS objectives. The Level-1 team reviewed each of the programmatic categories included in the BA and confirmed that they were consistent with the ACS. This is documented for each of the proposed actions that are the subject of this Opinion.

#### **A. Effects of Proposed Action**

Individual and groups of actions (programs or projects) implemented in accordance with management direction in the LRMPs and RMPs are expected to affect UWR steelhead and UWR chinook salmon in a variety of ways. Some may result in adverse effects to salmonid habitat, while others are expected to maintain or restore habitat conditions. Because all actions will be designed and mitigated in accordance with the ACS objectives, land allocations, S&Gs, and BMPs, any associated adverse effects (e.g., increased habitat sedimentation) are expected to be generally minor in magnitude and short-lived in duration. Chapter V of FEMAT (1993) discusses generally the potential adverse effects of these actions on fish habitat and populations.

Table 1. Dominant environmental baseline for each of the 4<sup>th</sup> field subbasins within the UWR steelhead and UWR chinook salmon ESUs. NPF=not properly functioning, AR=at risk, PF=properly functioning, ND=no data

Habitat Indicator	4 <sup>th</sup> field subbasin within the UWR steelhead and UWR chinook salmon ESUs						
	Tualatin	Yamhill	Middle Willamette	Molalla	North Santiam	South Santiam	Upper Willamette
Temperature	NPF	NPF	NPF	NPF	AR-NPF	AR	AR
Sediment	AR	AR	NPF	AR	AR	AR	AR
Chem. Contam./Nut.	NPF	NPF	PF	AR	AR	AR	AR
Physical Barriers	NPF	NPF	NPF	PF	PF	AR	PF-AR
Substrate	NPF	NPF	AR	PF	PF	AR	AR-NPF
LWD	NPF	NPF	AR	NPF	NPF	NPF	NPF
Pool Freq.	AR	AR	PF	NPF	NPF	NPF	AR
Pool Qual.	AR	AR	PF	AR	PF-AR	AR	NPF
Off-Channel Habitat	AR	NPF	AR	PF	PF	PF	NPF
Refugia	AR	AR	AR	ND	ND	AR	AR-NPF
Width/Depth Ratio	ND	ND	ND	NPF	AR-NPF	AR	AR
Streambank Condition	AR	NPF	PF	AR	AR-NPF	NPF	AR-NPF
Floodplain Connectivity	AR	NPF	NPF	AR	ND	NPF	NPF
Peak/base flows	ND	ND	ND	AR-NPF	AR	NPF	AR-NPF
Drainage Network Increase	ND	ND	ND	AR-NPF	AR	AR	AR
Road Des. & Loc.	NPF	NPF	NPF	NPF	AR	NPF	NPF
Disturbance History	AR	NPF	NPF	AR	AR	NPF	NPF
Riparian Reserves	AR	NPF	AR	NPF	NPF	NPF	NPF

Table 1. Dominant environmental baseline for each of the 4<sup>th</sup> field subbasins within the UWR steelhead and UWR chinook salmon ESUs (continued). NPF=not properly functioning, AR=at risk, PF=properly functioning, ND=no data

Habitat Indicator	4 <sup>th</sup> field subbasin within the UWR steelhead and UWR chinook salmon ESUs		
	McKenzie	Middle Fork Willamette	Coast Fork Willamette
Temperature	PF	NPF	AR
Sediment	AR	NPF	AR
Chem. Contam./Nut.	PF	PF	NPF
Physical Barriers	PF	NPF	NPF
Substrate	PF	AR	AR-NPF
LWD	AR	NPF	NPF
Pool Freq.	AR	NPF	AR-NPF
Pool Qual.	AR	AR	NPF
Off-Channel Habitat	AR	AR	AR-NPF
Refugia	AR	AR-NPF	NPF
Width/Depth Ratio	AR	AR	AR
Streambank Condition	PF	AR	AR
Floodplain Connectivity	AR	AR	AR-NPF
Peak/base flows	AR	AR	NPF
Drainage Network Increase	AR	NPF	AR-NPF
Road Des. & Loc.	NPF	NPF	NPF
Disturbance History	NPF	AR	NPF
Riparian Reserves	AR-NPF	NPF	NPF

The additional information provided by the Salem District BLM and Willamette NF describe in detail S&Gs and BMPs that the USFS and BLM will implement to reduce and minimize the potential for adverse effects resulting from the programmatic activities.

The watershed-scale environmental baselines and site scale expected effects associated with individual or groups of projects were evaluated via use of the procedures outlined in NMFS (1996b). These evaluation methods were designed to ensure that Level-1 teams can efficiently provide adequate information in BAs to evaluate effects of actions subject to ESA Section 7 conferences and consultations. Effects of actions are expressed in terms of the expected effect (i.e., restore, maintain, or degrade proper functioning) on each of 17 aquatic habitat factors at the site scale, as described in the "Checklist for documenting environmental baseline and effects of the action" (Checklist) completed for each programmatic category.

The evaluation procedures described in NMFS (1996b) are based on a "Matrix of Pathways and Indicators" (Matrix), a holistic method for characterizing environmental baseline conditions and predicting the effects of human activities on those baseline conditions. The Matrix provides generalized ranges of functional values (i.e., properly functioning, at risk, and not properly functioning) for aquatic, riparian, and watershed parameters. The NMFS acknowledges that generalized values provided in the Matrix may not be appropriate for all watersheds within the range of Pacific salmonids or even within the range of a single ESU. Therefore, the NMFS encourages development of more biologically-appropriate matrices (referred to as "modified" matrices) in specific physiographic areas. The NMFS, in conjunction with the USFS and the BLM, is in the process of appropriately modifying the Matrix for watersheds that support UWR steelhead and UWR chinook salmon. Meanwhile, the generalized values are being utilized for ESA purposes.

The following is a discussion of the potential effects of the subject programmatic activities on Pacific salmonids and their habitat. Effect determinations were assigned to the programmatic categories based on the potential for actions within the category to affect UWR steelhead or UWR chinook salmon or streams or stream reaches with UWR steelhead or UWR chinook salmon. All of the individual actions do not necessarily have the same effect as the more general programmatic category. Where or when a particular action occurs may determine whether that particular action is given an effect determination of "no effect," "NLAA," or "LAA."

The Level-1 team determined that the effects of the programmatic categories would be the same in each of the 5<sup>th</sup> field watersheds within the range of UWR steelhead and UWR chinook salmon. Therefore, individual checklists for each action, in each watershed, were not prepared. Rather, one checklist, with the environmental baseline only, was prepared for each 5<sup>th</sup> field watershed (which was then combined for each 4<sup>th</sup> field subbasin), and one checklist with only the site scale effects was prepared for each programmatic category (these checklists and supporting information are located in the BA).

Since the effects of the actions were assessed at the site scale, the Level-1 team assigned what they felt were conservative effect determinations. Most of these actions are considered to have only minor effects on UWR steelhead, UWR chinook salmon, or their habitat. These effects are generally from the potential for minor amounts of sediment to reach streams, loss of LWD, disturbance to riparian vegetation, and/or minor disturbance to eggs, juvenile, or adult fish. The Level-1 team identified project design criteria for each programmatic category in the BA in order to minimize or avoid any potential adverse effects associated with these activities. Some individual actions addressed in a programmatic category may have negligible, beneficial, or no effect on UWR steelhead and UWR chinook salmon.

Individual actions will be analyzed to determine if they comply with the programmatic categories addressed in this Opinion. If so, the action agency will determine if the programmatic effect determination is correct for the individual action. Project files shall document that the project is covered by this programmatic Opinion and shall document the effect determination. All projects covered by this Opinion will be documented on a report form that covers all the items on Attachment 1 and will be organized by 5<sup>th</sup> field watersheds. The Level-1 team will meet as needed to review the reports. If the effect determination is the same as the programmatic effect determination or if it is less impacting (e.g., programmatic effect determination is LAA, and the individual action is NLAA), no additional consultation is necessary. If, on the other hand, impacts are greater than anticipated, consultation will be reinitiated to address the impacts.

The NMFS finds that temporary adverse effects to Pacific salmonids and their habitat may occur as a result of the proposed programmatic categories. However, any adverse effects from the proposed programmatic categories are expected to be of limited extent and duration. The spatial and temporal extent of potential adverse effects which may lead to incidental take are described for each category in the BA. However, in each case, these adverse effects will not retard nor prevent attainment of properly functioning habitat indicators important to Pacific salmonids at the project or watershed scales.

Taking a conservative approach, the following group of actions were determined LAA UWR steelhead or UWR chinook salmon. Largely, however, the actions will not result in adverse effects. Where they do occur, adverse effects are expected to be limited in time, duration and scope, and are expected to be non-significant to the 5<sup>th</sup> field watersheds in which they occur. Programs under this category are: road maintenance, aquatic habitat projects, trail maintenance and construction, road decommissioning and obliteration, repair of storm damaged roads, nearstream and instream surveys, environmental education with instream activities (Salmon Watch), pump chances, firewood collection, public use of developed sites and dispersed public use, developed boat ramps, non-riparian rock quarries, infrastructure maintenance, and recreating on surface waters.

#### Road Maintenance

Road maintenance activities have the potential to deliver sediment into channels, create turbidity, reduce LWD potential, and degrade the stream influence zone (one site potential tree). Beneficial effects occur where maintenance reduces potential for catastrophic erosion and sediment delivery to stream channels.



These actions may cause a short-term degradation of water quality and habitat substrate due to sediment inputs and the removal of LWD. There is also the potential for these actions to have a short-term adverse effect on the drainage network. Road maintenance activities will tend to restore substrate habitat conditions by reducing long-term sediment inputs and can potentially restore habitat access by correction of physical barriers associated with roads.

#### Aquatic Habitat Projects

These projects are expected to provide ecological benefits, such as improved spawning and rearing habitat, while recovery of natural processes occurs. Since these projects involve work in the stream, they have the potential to deliver sediment, create turbidity, cause fuel/oil spills, cause streambank erosion, disturb the stream influence zone, disturb fish, and cause incidental mortality (e.g., accidental death of a fish during placement of a log).

These actions may cause a short-term degradation of water quality due to sediment inputs and chemical contamination. Streambank condition and habitat substrate may also be adversely affected in the short-term. However, aquatic habitat projects will tend to restore habitat conditions by improving water temperature, habitat substrate, LWD, pool frequency and quality, off-channel habitat, refugia, width/depth ratio of the stream, streambank condition and floodplain connectivity in the long-term. There is also a potential for these actions to restore habitat access by correcting fish barriers.

#### Trail Maintenance and Construction

Trail maintenance and construction have the potential for sediment delivery to streams, turbidity, disturbance at stream crossings or when trails are near streams, and chemical contamination. Beneficial effects occur where maintenance reduces potential adverse impacts to stream channels (e.g., reduces streambank erosion).

These actions may cause short-term degradation of water quality and habitat substrate due to sediment inputs and chemical contamination. They also have the potential to adversely affect LWD and riparian reserves. Trail maintenance activities will tend to restore habitat substrate conditions in the long-term by reducing sediment inputs, and may potentially restore streambank conditions.

#### Road Decommissioning and Obliteration

Road decommissioning and obliteration have the potential for sediment delivery to channels and increased turbidity. Long-term beneficial effects result from restoration of hydrologic functions, reduced risk of washouts and landslides, and reduction of sediment delivery to streams.

These activities may cause a short-term degradation of water quality and habitat substrate due to sediment inputs. In the long-term, these projects will tend to restore habitat substrate by reducing the risk of sediment delivery to streams and restore fish passage by correcting fish barriers caused by roads. Road decommissioning projects will also tend to restore hydrology by reducing peak flows and

reducing the drainage network. Watershed conditions will also be improved as road densities are reduced and riparian reserves are restored. These projects may also potentially improve floodplain connectivity.

#### Repair of Storm Damaged Roads

Repair of storm damaged roads have the potential for sediment delivery to channels, increased turbidity, loss of potential LWD, and incidental mortality. Beneficial effects occur where maintenance reduces potential adverse impacts to stream channels.

These actions may cause a short-term degradation of water quality and habitat substrate due to sediment inputs. There is also the potential for an adverse effect on LWD. In the long-term, repairing damaged roads will restore water quality and habitat substrate by the reducing the risk of large sediment inputs, and may potentially improve habitat access by correcting fish passage barriers.

#### Nearstream and Instream Surveys

Disturbance of fish or crushing of eggs could occur during these activities. These activities will maintain current habitat conditions for all habitat indicators.

#### Environmental Education with Instream Activities

Environmental education can result in trampling of riparian areas or harassment of spawning fish. These activities will maintain all the habitat indicators, with a potential for localized degradation of the riparian reserves.

#### Pump Chances

Use of pump chances lend the possibility for disturbance, entrainment, and loss of fish. These activities will maintain current habitat conditions for all habitat indicators.

#### Firewood Collection

Firewood collection results in the removal of logs from stream influence zones and potential reductions in large woody debris recruitment into channels.

#### Public Use of Developed Sites and Dispersed Public Use

Public use can result in the alteration of habitat, disturbance of fish, and degradation of water quality. These activities may degrade riparian reserves.

They also have the potential to degrade water quality due to short-term sediment inputs and/or chemical contamination. There is also the potential for degradation of habitat substrate, channel width/depth ratio and streambank condition associated with the public use of developed and undeveloped areas near anadromous streams.

### Developed Boat Ramps

Use of boat ramps can cause fish disturbance by people and gear entering, leaving, and floating on the water, and the potential for transient turbidity or release of harmful materials or exotic species into the water. Maintenance of ramps and associated facilities can reduce overall impacts on riparian areas by controlling access and reducing the potential for silt or other impurities that might enter the water.

These activities have the potential to degrade water quality due to sediment inputs and chemical contamination.

### Non-Riparian Rock Quarries

Rock quarry operation and hauling can result in sediment delivery to streams.

Activities associated with non-riparian rock quarries have the potential to cause short-term degradation of water quality and habitat substrate due to sediment inputs.

### Infrastructure Maintenance

Adverse effects may result from the access provided for people to aquatic habitats, from the potential for degradation in water quality, and potential decreases in vegetation. Beneficial effects occur when maintenance reduces the potential for water quality degradation and improves the control of human access to waters and riparian areas.

These activities may cause short-term degradation of water quality due to sediment inputs, and have the potential to degrade riparian reserves and impact water quality by chemical contamination.

Infrastructure maintenance activities also have the potential to restore water quality by reducing chemical contaminant and sediment inputs to streams in the long-term. These activities also may potentially restore habitat substrate, streambank condition and riparian reserves.

### Recreating on Surface Waters

Recreating on surface waters can result in minor disturbance of adult fish. These activities will maintain current habitat conditions for all habitat indicators.

Because of the potentially large number and wide geographic range of the activities covered in this Opinion, a continuing accounting or tracking of the overall watershed effects associated with these programmatic categories is important. As part of the ongoing Level-1 team review of programmatic actions, the USFS and BLM will report the number of actions within each category at the 5<sup>th</sup> field watershed level. This will assist the Level-1 team in monitoring trends in the number and location of certain activities and their impacts on the environmental baseline. The net effects of these activities will be added to the environmental baseline for each 5<sup>th</sup> field watershed and will be taken into account in subsequent consultations for any projects in these areas. An annual total of the number of projects covered by this Opinion will also be provided at the 4<sup>th</sup> field subbasin scale to allow monitoring of trends across entire ESUs.

The additional information provided by the Salem District BLM on July 19, 1999 and the Willamette NF on July 20, 1999 provide assurances that individual projects within each program category will be carried out in a manner that meets relevant NFP S&Gs and land management plan direction. Actions within the Eugene District BLM that fit within programmatic categories addressed in this Opinion will comply with those S&Gs and BMPs provided in the document submitted by the Salem District BLM. Likewise, actions within the Mt. Hood NF and Siuslaw NF that fit within programmatic categories addressed in this Opinion will comply with those S&Gs and BMPs provided in the document submitted by the Willamette NF. This additional information limits potential effects to listed UWR steelhead and UWR chinook salmon to those anticipated as a result of evaluating the effects of the action in this Opinion.

## **B. Cumulative Effects**

Cumulative effects are defined as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 CFR § 402.02). For the purposes of this consultation, the action area includes those portions of the five administrative units within the UWR steelhead and UWR chinook salmon ESUs, and river reaches downstream of the administrative unit boundaries that may be affected by the Federal land management activities.

Within the UWR steelhead and UWR chinook salmon ESUs, Federal lands comprise approximately 16% of the area. A portion of spawning and rearing habitat for UWR steelhead and UWR chinook salmon occurs on USFS and BLM lands. Gradual improvements in habitat conditions for salmonids are expected on these lands as a result of NFP implementation.

In general, NMFS (1996a) identifies destruction and modification of habitat, overutilization for recreational purposes, and natural and human-made factors as being the primary reasons for the decline of west coast steelhead. Historically, habitat blockage and degradation have been significant problems in the UWR ESU. Available habitat has been reduced by construction of dams in the Santiam, McKenzie, and Middle Fork Willamette River subbasins, and these dams have probably adversely affected remaining production via thermal effects. Agricultural development and urbanization are the main activities that have adversely affected habitat throughout the basin (March 24, 1999, 64 FR 14322).

Significant improvements in UWR steelhead and UWR chinook salmon production outside of USFS and BLM land is unlikely without changes in forestry, agricultural, and other practices occurring within non-Federal riparian areas. The NMFS is aware that significant efforts, such as the Oregon Plan for Salmon and Watersheds and the Willamette River Initiative, have been developed to improve

conservation of at-risk salmonid populations (including UWR steelhead and UWR chinook salmon) on non-Federal land. The NMFS is not aware of any general changes to existing State and private activities within the action area that would cause greater impacts than presently occur to any of the salmonid species considered in this consultation.

Until improvements in non-Federal land management practices are actually implemented, the NMFS assumes that future private and State actions will continue at similar intensities as in recent years. Now that UWR steelhead and UWR chinook salmon are listed under the ESA, the NMFS assumes that non-Federal land owners in those areas will also take steps to curtail or avoid land management practices that would result in the take of those species. Such actions may be prohibited by Section 9 of the ESA, and subject to the incidental take permitting process under Section 10 of the ESA. Future Federal actions, including the ongoing operation of hydropower projects, hatcheries, fisheries, and land management activities will be reviewed through separate Section 7 processes. In addition, non-Federal actions that require authorization under Section 10 of the ESA would be considered in the environmental baseline for future Section 7 consultations.

### **Conclusion**

The NMFS has determined, based on the information and analysis described in this Opinion that implementation of the programmatic activities as proposed is not likely to jeopardize the continued existence of UWR steelhead and UWR chinook salmon. These actions are also not expected to result in the destruction or adverse modification of proposed critical habitat for UWR steelhead and UWR chinook salmon.

### **Basis for Determinations**

1. The proposed programmatic USFS and BLM land management actions have been determined to be consistent with the NFP ACS objectives (as documented in the BA).
2. Some of the actions described in this Opinion will result in long-term improvement of habitat conditions for UWR steelhead and UWR chinook salmon. Degradation of habitat conditions, where applicable, is expected to be short-term in duration and of limited geographic scope.
3. Because some programmatic land management actions may result in more than a negligible likelihood of incidental take, the NMFS has developed a set of standardized set of reasonable and prudent measures and associated terms and conditions to minimize the likelihood of incidental take from individual actions within each programmatic category.
4. The Level-1 team may review individual proposed actions to determine if action-specific circumstances would necessitate additional measures, through reinitiation, to avoid or minimize adverse effects beyond those listed in the Incidental Take Statement of this Opinion.

5. The USFS and BLM will provide the Level-1 team with reports of the total number and net effects of actions in each category by 5<sup>th</sup> field watershed to update the environmental baseline for subsequent consultations within the action areas. The Level-1 team will monitor trends in the number and location of individual actions and assess overall watershed impacts to the environmental baseline associated with these programmatic actions.
6. The Level-1 team will meet, as needed, to review the reports. If during the review, it is decided that impacts are greater than anticipated, this consultation will be reinitiated to address the impacts (e.g., require Level-1 team review of all actions prior to implementation or addition of more terms and conditions).

In reaching these conclusions, the NMFS has utilized the best scientific and commercial data available as documented herein and by the BA and documents incorporated by reference.

Based upon the BA and Level-1 team review, the NMFS concurs that the proposed programmatic actions are consistent with the NFP and its associated components (i.e., the ACS objectives, S&Gs, watershed analysis, watershed restoration, and land allocations).

Project scale analyses indicate that any adverse effects from the proposed programmatic actions are expected to be of limited extent and duration. The NMFS finds that temporary adverse effects to UWR steelhead and UWR chinook salmon and their habitat may occur with the proposed programmatic actions. However, in each case, these adverse effects will not retard nor prevent attainment of properly functioning habitat indicators important to these species at the project scale nor result in an inability for recovery of the species. At the watershed scale, the net effect of the proposed programmatic actions maintains and restores watershed habitat indicators and ecological processes that define the biological requirements of the species.

Therefore, the NMFS concludes that when the effects of these proposed programmatic actions are added to the environmental baseline and cumulative effects occurring in the relevant action areas, they are not likely to jeopardize the continued existence of UWR steelhead and UWR chinook salmon. In addition, the NMFS concludes that the proposed programmatic actions will not result in the destruction or adverse modification of proposed critical habitat for UWR steelhead and UWR chinook salmon.

### **Reinitiation of Consultation**

Reinitiation of consultation is required if discretionary Federal involvement over the action has been retained or authorized and: (1) The amount or extent of taking specified in the Incidental Take Statement, below, is exceeded; (2) the action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and the biological opinion; (3) new information or project monitoring reveals effects of the action that may affect listed species in way not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR § 402.16).

### **Incidental Take Statement**

Sections 4(d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Actions that harass are those that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement (ITS) specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

The measures described below are non-discretionary. They must be implemented by the USFS and BLM; they become binding conditions necessary in order for the exemption in Section 7(o)(2) to apply. The USFS and BLM has a continuing duty to regulate the programmatic actions covered in this ITS. If the USFS or BLM (1) fails to adhere to the terms and conditions of the ITS, and/or (2) fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of Section 7(o)(2) may lapse.

#### **Amount or Extent of the Take**

Notwithstanding the NMFS' conclusion that the subject programmatic activities are not expected to jeopardize the continued existence of UWR steelhead or UWR chinook salmon, there may be short-term impacts and the NMFS anticipates that there could more than a negligible likelihood of incidental take of these species from some of the actions. Adverse effects of management actions such as these are largely unquantifiable in the short-term, and may not be measurable as long-term effects on the species' habitat or population levels. Even though the NMFS expects incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable the NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable."

This ITS is effective for one year from the date of its issuance. At that time, the NMFS will evaluate the effectiveness of the review and tracking requirements. The USFS and BLM will need to reinitiate this consultation to obtain additional incidental take authorization for the programmatic actions addressed in this Opinion.

### **Effect of the Take**

In this Opinion, the NMFS has determined that the level of anticipated take associated with road maintenance, aquatic habitat projects, trail maintenance and construction, road decommissioning and obliteration, repair of storm damaged roads, nearstream and instream surveys, environmental education with instream activities (Salmon Watch), pump chances, firewood collection, public use of developed sites and dispersed public use, developed boat ramps, non-riparian rock quarries, infrastructure maintenance, and recreating on surface waters is not likely to result in jeopardy to the listed UWR steelhead or UWR chinook salmon.

### **Reasonable and Prudent Measures**

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of incidental take of UWR steelhead and UWR chinook salmon resulting from individual actions within the programmatic categories.

The USFS and BLM shall:

1. Incorporate the project design criteria, as described in the BA and reiterated below as terms and conditions, for individual actions taken within each of the programmatic action categories.
2. Document and report all actions that are covered by this ITS.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, the USFS and BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary. The USFS and BLM shall do the following:

1. Incorporate the project design criteria, as described in the BA and largely reiterated below as terms and conditions
  - A. Road Maintenance
    - C Dispose waste in stable sites only.
    - C Do not dispose waste on active floodplains (approximately 100 feet from the



stream channel).

- C Leave vegetation in ditches, when possible. Retain streamside vegetation as a buffer for the streams when doing brushing and other roadside vegetation maintenance activities.
- C Where sediment risks warrant, use filter strips (straw bales, or similar, if vegetation strips are not available) – do not create additional diversion potential.
- C Schedule maintenance activities during the dry season to the maximum extent possible to avoid wet periods.
- C Clean ditches of slide materials.
- C Follow the Oregon Department of Fish and Wildlife (ODFW) Guidelines for Timing of In-Water Work, except where the potential for greater damage to water quality and fish habitat exists if the emergency road maintenance is not performed as soon as possible.

B. Aquatic Habitat Projects

- C Follow ODFW Guidelines for Timing of In-Water Work.
- C Stabilize potential erosion areas.
- C Minimize the number of access points through the riparian areas.
- C Minimize time in which heavy equipment is in the stream channel.
- C Include an approved spill containment plan.
- C Control sedimentation.
- C No conifers should be felled in the riparian area unless conifers are fully stocked.

C. Trail Maintenance and Construction

- C Follow ODFW Guidelines for Timing of In-Water Work.
- C Do not remove down wood from site (except to clear trail).

D. Road Decommissioning and Obliteration

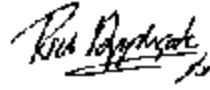
- C Dispose waste in stable sites or within existing road prism only.
- C Do not dispose fill on floodplain except to restore natural contour of roadbed.
- C Leave vegetation in ditches, when possible.
- C Schedule activities during the dry season to the maximum extent possible.
- C Ensure culvert removal restores natural drainage patterns.

- Stabilize potential erosion areas.
  - C When removing culverts, lay back slope to 2:1 ratio (unless engineering concerns dictate differently).
  - C Remove all buried wood fill from sidecast pullbacks.
  - C Use available Access and Travel Plan (BLM - Transportation Management Plans) to determine when decommissioning is appropriate.
  - C Follow ODFW Guidelines for Timing of In-Water Work.
- Repair of Storm Damaged Roads
    - C Dispose waste in stable sites only.
    - C Do not dispose waste on active floodplains (approximately 100 feet from the stream channel).
    - C Schedule activities during the dry season to the maximum extent possible to avoid wet periods.
    - C When culverts are replaced, design outlets to minimize erosion.
    - C Follow ODFW Guidelines for Timing of In-Water Work.
    - C Involve fishery biologists and/or hydrologists in project design when projects may have potential impacts to streams (in emergency situations this criteria may be waived).
    - C Use available Access and Travel Plan (BLM - Transportation Management Plans) to determine when repairs are appropriate
- Nearstream and Instream Surveys
    - C Minimize amount of disturbance/stress to fish.
    - C Avoid walking on fish redds.
    - C For cultural resource test pits, locate excavated material away from streambank. Replace all material back into pits when survey is complete.
- Environmental Education with Instream Activities
    - C Use a number of streams for trips and adjust use to minimize impacts on any one stream.
    - C Minimize disturbance to spawning fish while viewing them.
- H. Pump Chances
- C A fish biologist shall evaluate each one to determine: (1) any need for fish screens and passage; and (2) effects on flows and downstream habitat. Choose alternate sites if necessary to minimize impacts on fish.

- I. Public Use of Developed Sites and Dispersed Public Use
    - C Limit activities harming riparian vegetation, and fish or their habitat.
    - C Implement a rehabilitation program where needed or closure of site where needed to minimize impacts on fish and fish habitat.
  - J. Developed Boat Ramps
    - C Manage and maintain ramps and associated areas to limit impacts on vegetation, water quality (including petroleum products), and sediment production.
  - K. Non-Riparian Rock Quarries
    - C Develop and implement an approved site management plan.
    - C Maintain all road accesses adequately, with seasonal stipulations, if appropriate.
    - C Minimize sediment to the degree practical and employ sediment control measures where appropriate.
  - L. Infrastructure Maintenance
    - C Manage human activities to reduce impacts on stream or riparian areas.
    - C Restore riparian vegetation to the degree possible.
    - C Where chronic problems (e.g. erosion, water quality, or disturbance) exist in key habitat areas, consider relocation and rehabilitation of the site.
  - M. Recreating on Surface Waters
    - C Apply resource protection clauses to special use permits, especially in areas of known spawning activity.
    - C Avoid put-in and take-out areas where spawning is occurring.
2. Reporting Requirement
- A. The USFS and BLM shall document in the project files each project that fits into a programmatic category and the effect determination (see Attachment 1 for reporting form).
  - B. The USFS and BLM shall present the results of the reporting, summarized by 5<sup>th</sup> field watershed, to the Level-1 team within one year of issuance of this ITS.

Questions regarding consultation on these actions should be directed to Michelle Day, of my staff, at (503) 231-6938.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Stelle, Jr.", with a stylized flourish at the end.

William Stelle, Jr.  
Regional Administrator

Attachment 1: Reporting form to document project consistency with the Willamette Province  
programmatic BA and effect determination

## References

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the sources of data, information and references used in developing this consultation.

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Bell, M.C. 1991. Fisheries handbook of engineering requirements and biological criteria. U.S. Army Corps of Engineers, Office of the Chief of Engineers, Fish Passage Development and Evaluation Program, North Pacific Division, Portland, OR.

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## ATTACHMENT 1

### DOCUMENTATION OF PROJECT CONSISTENCY WITH THE WILLAMETTE PROVINCE PROGRAMMATIC BA

I have reviewed the following project and have determined that it is consistent with the Willamette Province Programmatic BA and that no additional BA is required.

Complete one form for each project reviewed (projects with multiple units can go on one form)

Name/Title of Project: \_\_\_\_\_

Type of Activity (from Biological Assessment: \_\_\_\_\_

NEPA Document Type (EA, CX) and Number: \_\_\_\_\_

Fiscal Year Project will be Implemented: \_\_\_\_\_

Project Lead: \_\_\_\_\_

Project Location and Size (identify all Watersheds/Subwatersheds affected and the units in each):  
See Programmatic BA for unit type:

<u>4<sup>th</sup>-Field Watershed</u>	<u>5<sup>th</sup>-Field Watershed</u>	<u>Subwatershed</u>	<u>Acres</u>	<u>Sites</u>
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Project Effect Determination (based on biologist review)(circle):    LAA    NLAA    NE  
(If the Effect Determination is greater than in the Programmatic BA the project cannot be covered by the Programmatic BA)

Are the project's effects on the Checklist Indicators the same as indicated in the Programmatic BA?  
Yes \_\_\_ No \_\_\_ If No, indicate how and why the effects are different.



Is the project consistent with the Project Design Criteria for the appropriate category of the Programmatic BA? Yes \_\_\_ No \_\_\_ (If No, the project cannot be covered by the Programmatic BA).

Comments:

Prepared by (Fisheries Biologist): \_\_\_\_\_

Date: \_\_\_\_\_

Make 2 duplicates - the original goes with project or NEPA file; the first duplicate is maintained in the Area Biologist's files, the second duplicate goes to the Level 1 team representative.

4<sup>th</sup>-Field Watershed

Tualatin

Yamhill

Middle Willamette

Molalla

North Santiam

5<sup>th</sup>-Field Watershed

Dairy Creek  
Scoggins Creek  
Rock Creek

Upper South Yamhill  
Willamina Creek  
Mill Creek/Salt Creek  
Lower South Yamhill  
North Yamhill

Rickreall Creek

Lower Molalla  
Milk Creek  
Abiqua Creek  
Rock/Pudding  
Upper Molalla

Middle North Santiam  
Little North Santiam  
Lower North Santiam

South Santiam	Hamilton/South Santiam Crabtree Creek Thomas Creek South Santiam Wiley Creek Upper South Santiam
Upper Willamette	Luckiamute River Muddy/Willamette Calapooia River
McKenzie	Lower McKenzie Mohawk River Upper McKenzie Mainstem McKenzie Minor Tributaries Quartz Creek South Fork McKenzie Horse Creek
Middle Fork Willamette	Lower Middle Fork Willamette Lost Creek Little Fall Creek Fall Creek Winberry Creek Middle Fork Willamette Downstream Tributaries Hills Creek Upper Middle Fork Willamette
Coast Fork Willamette	Lower Coast Fork Willamette Mosby Creek Upper Coast Fork Willamette Lower Row River